

# FUNCTIONAL OBSOLESCENCE: A GENERAL OVERVIEW

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### Introduction:

Definition: An element of depreciation resulting from accrued depreciation resulting from deficiencies or superadequacies in the structure.<sup>1</sup>

Functional obsolescence should be considered, although may not be, in each of the three generally accepted approaches to value: ***Income Capitalization Approach, Sales Comparison Approach, and the Cost Approach.***

In the ***Income Capitalization Approach***, functional obsolescence is taken into account when developing the rental rate. Any functional obsolescence present is measured by determining the potential rent loss resulting from the deficiency. At times, sufficient comparable market data must be available to develop reliable rental rates and corresponding capitalization rates. This is particularly true when the appraised property is a type that is owner occupied and not considered an investment property.

In the ***Sales Comparison Approach***, functional obsolescence is taken into account when comparing sales of similar properties to the subject. Ideally, the comparable sales have the same or similar forms of obsolescence, which precludes the need to make significant adjustments. However, more frequently, adjustments are necessary. These adjustments can be quantified by developing specific functional obsolescence penalties, which are then used in the derivation of an adjustment to be applied to the comparable sales. More often than not, appraisers use judgment to derive an adjustment. The preferred method of determining market value is through proper application of the sales comparison approach. Use of this approach can result in a reliable indication of value if sufficient comparable sales are available. Sometimes, they are no sales or lack of sales.

Most frequently, functional obsolescence is associated with the cost approach. In the ***Cost Approach***, functional obsolescence is accounted for as an element of total depreciation. Total depreciation is a loss in value from all causes and presents the difference between cost new of an improvement and its market value. Total depreciation has three elements: physical deterioration, functional obsolescence, and external obsolescence. Functional obsolescence may be caused by a deficiency or superadequacy in the property. Each of these types of depreciation can be present either individually or in a combination with each other.

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<sup>1</sup> The Dictionary of Real Estate Appraisal, 4<sup>th</sup> Edition, 2002, page 122

When the appraiser is analyzing the cost approach, whether for an appraisal or mass appraisal assessment purpose, the appraiser will estimate the replacement/reproduction cost and then determine if deferred maintenance is present. Next, deduct a percent or dollar amount for physical incurable short-lived and long-lived items. The next step requires a decision by the appraiser:

- Does the property suffer from functional obsolescence? Yes or No? If no, the appraiser finishes the cost approach. If yes, the appraiser must then consider the type
- Is the functional obsolescence a deficiency or a superadequacy?
- Is the functional obsolescence curable or incurable?
- Then, how will the appraiser handle the problem?

A deficiency is an inadequacy in the structure or one of its components.<sup>2</sup> Superadequacy is the opposite, an excess in the capacity or quality a structure or structural components and determined by market standards.<sup>3</sup>

There are five types of Functional Obsolescence:

1. Curable functional obsolescence caused by a deficiency requiring an addition (installation) of a new item
2. Curable functional obsolescence caused by a deficiency requiring the substitution (replacement) of an existing item
3. Curable functional obsolescence caused by a component of real property that is not necessary and therefore adds no value to the current or anticipated use (i.e., a superadequacy that is economically feasible to cure)
4. Incurable functional obsolescence caused by a deficiency
5. Incurable functional obsolescence caused by superadequacy

Once the appraiser identifies the deficiency or superadequacy, a percentage or dollar amount must be calculate based on facts and is defensible.

Many times analysis is complicated only because the appraiser provides a minimal narrative with a lump sum dollar or percent adjustment. If so, the appraiser is probably bending the rules slightly. The cost approach has not changed since we took our first basic appraisal class. Looking back at our first appraisal class, the instructor begins with an in-depth review of the cost approach. Briefly, the instructor states, the cost approach begins with--

- An estimate the cost new of the structure (replacement or reproduction cost)
- An estimate physical curable deterioration (deferred maintenance)
- An estimate physical incurable, Short-Lived Items
- An estimate physical incurable, long-lived items

Then immediately thereafter, the instructor begins a discussion on functional obsolescence and our brain becomes dark and closes down. How could the cost approach be so complicated?

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<sup>2</sup> Ibid, 77

<sup>3</sup> Ibid, 282

The instructor is only stating what we have already said--

- Identify the functional problem
- Identify the component(s) in the facility (superadequacy) or lack of (deficiency) components associated with the problem
- Identify possible corrective measures (cost to cure)
- Select the appropriate measure
- Quantify the loss caused by functional problem, which results in added value if the problem is corrected
- Determine if the item is curable or incurable (if the value added is equal to or greater than the cost to cure, the functional problem is curable).
- Apply the functional obsolescence formula (below).<sup>4</sup>

**Note** what we (appraiser, taxpayer) consider functional obsolescence may not be functional obsolescence based on market standards as of the effective date of the appraisal.

Using the format in E. Nelson Bowes text "In Defense of the Cost Approach,"<sup>5</sup> and The Appraisal of Real Estate, functional obsolescence is not as difficult as it seems to be.

|         |                                      |              |
|---------|--------------------------------------|--------------|
| Line 1: | Cost of the Existing Item            | Plus         |
| Line 2: | Less Depreciation Already Charged    | Minus        |
| Line 3: | (A) Cost to Cure, or (B) Value Added | Plus         |
| Line 4: | Value of the Item                    | <u>Minus</u> |
| Line 5: | Functional Obsolescence              | \$           |

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Line 1, 2, and 3 are costs. Line 4 is value. Functional obsolescence is Line 5, cost minus value.

Many appraisers gloss over functional obsolescence with minimal data and support. The Uniform Standards of Professional Appraisal Practice (USPAP) and ethical requirements from various appraisal organizations have guidelines to follow, but too often appraisers bend the rules slightly. Many appraisers, depending on their skill level or experience, will select a multiple of five. By this, I mean, when reviewing an appraisal report, the deduction for functional obsolescence is usually 5%, 10%, 15%, etc. This is similar to the generally accepted 5% vacancy/credit loss and 10% capitalization rate.

The **Cost Approach** is easy when using Marshall Valuation Services. Enter the necessary data, hit report, and you have a value. The cost approach becomes complicated when functional obsolescence is present and we must analyze the market to support our conclusions. Remember, is functional obsolescence curable or incurable; is there a deficiency or a superadequacy and then how do you solve the problem?

Looks easy! Appraisers should not have problems with functional obsolescence since:

1. Functional obsolescence is discussed in almost every appraisal
2. The cost approach considers reproduction or replacement costs of the property appraised

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<sup>4</sup> Ibid, 436

<sup>5</sup> In Defense of the Cost Approach, 2011, page 65 and The Appraisal of Real Estate, 13<sup>th</sup> Edition, 2008, page 437

3. Generally, functional obsolescence is implicit in the cost approach
4. Functional obsolescence is an element of depreciation
5. Functional obsolescence stems from a superadequacy or a deficiency in the property
6. Functional obsolescence is either a physical element that buyers are unwilling to pay for or a deficiency that impairs the utility of a property when compared with a more modern replacement
7. The underlying foundation for functional obsolescence is in the market. The appraiser must not only understand the market, but how the market operates for the type of property appraised

Part of the appraisal process is that the appraiser must understand the dynamics of the real estate market. The appraiser lists the property attributes and considers how the market perceives these attributes. The attributes of a property are those that identify its physical capabilities. Using an industrial property as an example, the following attributes are considered significant in the valuation process:

- Building configuration
- Number of floors
- Clear ceiling heights
- Bay spacing
- Loading facilities
- Construction
- Accessibility

Further, let us combine some of the issues noted above and put them into real situations.

- A building used as a warehouse has restricted clearances due to low ceilings heights, piping obstructions, and structural columns. An increase in labor costs necessitated the use of forklift trucks and high-stackers to move and store goods. The occupant cannot make maximum use of floor space.
- A building complex is composed of several attached and detached sections impede the orderly flow of production. The problem adds to the cost of material handling and may necessitate additional personnel or transportation systems.
- A machine or production line is installed that has a capacity in excess of the demand of the operation being conducted or envisioned in the future.

An estimate of functional obsolescence requires more than a casual observation of performance or a brief walk through a building.

#### Costs of Functional Obsolescence

- Cost of reproduction is the estimated amount required to reproduce a duplicate or a replica of the entire property with the same materials.
- Cost or replacement is the estimated amount required to replace the entire property with a modern new unit using the most current technology.
- Estimating replacement cost is generally preferred because the typical purchaser would substitute a property of similar utility than reproduce an exact duplicate.
- The depreciation must be consistent with the cost estimate. Deducting for an item of depreciation or obsolescence that is not built into the improvements through the cost estimate is inappropriate.

- Care must be exercised that actual cost data does not include some items of functional obsolescence. Contemporary cost services, i.e. Marshall Valuation Services, are designed to estimate the cost by square foot, component breakdown, unit in place, segregated cost of cubic footage. The data is usually average costs for functional facilities. Therefore, the cost derived by the square foot or component breakdown method, generally reflect replacement costs. Segregated and unit in place will generally reflect reproduction cost new.

Some other areas we may discuss are:

- Superadequate/Excess Construction, a form of functional obsolescence using past construction practices, such as brick-on-concrete, which would be replaced today with steel frame construction.
- Excess construction that represents a building area that is not currently or likely to be used in the future.
- Excess operating costs, a property's design that result in operating inefficiencies that create higher expenses. Excess operating costs are calculated by discounting the annual excess operating costs, over the remaining life of the improvement.
- A major question is functional obsolescence "curable" or incurable"?
- Identifying functional obsolescence; as competent appraisers we have a feel for functional obsolescence. Our problem is quantifying the amount. Certain characteristics of an improvement provide attributes of functional obsolescence, such as the gross building area, overall age, construction dates of additions, construction materials, etc.
- How do you measure functional obsolescence? Develop a cost new and quantify each element of depreciation. Care must be given in the sequence of deductions.